

AMENDMENTS

In the Claims:

Please amend the claims as indicated hereafter.

1. (Currently Amended) A graphical display system, comprising:

a first graphics pipeline configured to ~~receive render two-dimensional (2D)~~ graphical data ~~transmitted received~~ from a graphics application and to render said graphical data received by said first graphics pipeline thereby defining a 2D graphical object, said first graphics pipeline further configured to define, within said 2D graphical object, a region for displaying three-dimensional (3D) graphical objects;

a second graphics pipeline configured to receive ~~render 3D~~ graphical data transmitted received from said graphics application and to render said graphical data received by said second graphics pipeline;

a display device configured to display an image; ~~said 2D graphical object~~; and

a compositor configured to receive said graphical data rendered by said first graphics pipeline and said graphical data rendered by said second graphics pipeline, said compositor further configured to interface, with said display device, said 2D graphical data and said 3D graphical data respectively rendered by said first and second graphics pipelines received by said compositor with said display device, wherein said image is based on said graphical data rendered by said first graphics pipeline and said graphical data rendered by said second graphics pipeline such that said 3D graphical data rendered by said second graphics pipeline is displayed within said region.

2. (Original) The system of claim 1, wherein said first graphics pipeline and said second graphics pipeline simultaneously and in parallel process said graphical data rendered by said first and second graphics pipelines.

3. (Currently Amended) The system of claim 1, further comprising:
an input device configured to receive an input from a user,
wherein ~~at least one of said~~ second graphics pipeline is configured to selectively super-sample ~~said 3D graphical data rendered by said at least one graphics pipeline~~ based on said input.

4. (Currently Amended) The system of claim 1, wherein:
said first second graphics pipeline is configured to super-sample a first portion of a 3D graphical object, said first graphical object portion defined by said 3D graphical data rendered by said first second graphics pipeline;
said system further comprises a third second graphics pipeline is configured to render 3D graphical data received from said graphics application and to super-sample a second portion of said 3D graphical object, said second graphical object portion defined by said 3D graphical data rendered by said second third graphics pipeline; and
said compositor is configured to average data values of said first and second graphical object portions and to transmit said averaged data values to said display device.

5. (Currently Amended) The system of claim 1, wherein said compositor is configured to interface 2D and 3D graphical data ~~received by said compositor~~ with said display device via a scanning process.

6. (Currently Amended) The system of claim 1, wherein said compositor is further configured to combine into a single data stream said 2D graphical data rendered by said first graphics pipeline and said 3D graphical data rendered by said second graphics pipeline.

7. (Currently Amended) The system of claim 1, ~~further comprising a third wherein said first~~ graphics pipeline is configured to receive a plurality of graphics commands, ~~said third graphics pipeline configured and~~ to transmit each of said graphics commands including three-dimensional graphical data to ~~at least one of said first and second graphics pipelines pipeline,~~ said ~~third~~ first graphics pipeline further configured to render two-dimensional graphical data associated with the remaining graphics commands, ~~wherein said compositor is further configured to receive said two-dimensional graphical data rendered by said third graphics pipeline and to interface said two-dimensional graphical data with said display device.~~

8. (Currently Amended) The system of claim 7, wherein said 3D graphical data rendered by said ~~first and second graphics pipelines pipeline~~ is included in one of said commands ~~transmitted received~~ by said ~~third~~ first graphics pipeline.

9. (Currently Amended) The system of claim 1, wherein:

~~said first graphics pipeline is configured to receive an input identifying a first coordinate range, said first graphics pipeline configured to discard, without rendering, based on said first coordinate range, a first portion of said graphical data transmitted from said graphics application, said first portion associated with coordinate values outside of said first coordinate range; and~~

~~said second graphics pipeline is configured to receive an input identifying a second coordinate range, said second graphics pipeline configured to discard, without rendering, based on said second coordinate range, a second portion of said 3D graphical data transmitted from said graphics application, said second portion associated with coordinate values outside of said second coordinate range.~~

10. (Currently Amended) The system of claim 9, further comprising a third graphics pipeline configured to render 3D graphical data received from said graphics application, wherein:

said first third graphics pipeline is configured to super-sample said 3D graphical data rendered by said first third graphics pipeline;

said second graphics pipeline is configured to super-sample said 3D graphical data rendered by said second graphics pipeline; and

said compositor is configured to average data values from said graphical data super-sampled by said first third and second graphics pipelines and to transmit said averaged data values to said display device.

11. (Canceled)

12. (Currently Amended) The system of claim 1, further comprising a third graphics pipeline configured to render 3D graphical data received from said graphics application, wherein said graphics application is configured to produce graphical data that defines a three-dimensional graphical object within said image, wherein said 3D graphical data rendered by said first third graphics pipeline defines a first portion of said 3D graphical object and wherein said 3D graphical data rendered by said second graphics pipeline defines a second portion of said 3D graphical object.

13. (Currently Amended) The system of claim 12, wherein:

 said first third graphics pipeline is configured to receive said graphical data produced by said application and to discard a portion of said graphical data produced by said application, said graphical data discarded by said first third graphics pipeline defining said second portion of said 3D graphical object; and

 said second graphics pipeline is configured to receive said graphical data produced by said application and to discard a portion of said graphical data produced by said application, said graphical data discarded by said second graphics pipeline defining said first portion of said 3D graphical object.

14. (Currently Amended) The system of claim 13, wherein:

said ~~first~~ third graphics pipeline is configured to super-sample said 3D graphical data rendered by said ~~first~~ third graphics pipeline;

said second graphics pipeline is configured to super-sample said 3D graphical data rendered by said second graphics pipeline; and

said compositor is configured to average data values from said graphical data super-sampled by said ~~first~~ third and second graphics pipelines and to transmit said averaged data values to said display device.

15. (Currently Amended) A graphical display system, comprising:

a first pipeline means for receiving rendering graphical data transmitted received from a graphics application ~~and for rendering said graphical data received by said first pipeline means thereby defining a 2D graphical object, said first pipeline means configured to define, within said 2D graphical object, a region for displaying three-dimensional (3D) graphical objects;~~

a second pipeline means for receiving rendering 3D graphical data transmitted received from said graphics application ~~and for rendering said graphical data received by said second pipeline means;~~

a means for displaying ~~an image; said 2D graphical object;~~ and

a compositing means ~~for receiving said graphical data rendered by said first pipeline means and said second pipeline means and for interfacing, with said displaying means, said 2D graphical data and said 3D graphical data respectively rendered by said first and second pipeline means received by said compositing means with said displaying means, wherein said image is based on said graphical data rendered by said first pipeline means and said graphical data~~

~~rendered by said second pipeline means such that said 3D graphical data rendered by said second pipeline means is displayed within said region.~~

16. (Currently Amended) The system of claim 15, further comprising a third pipeline means for rendering 3D graphical data received from said graphics application, wherein:

said ~~first~~ third pipeline means includes a means for super-sampling said 3D graphical data rendered by said ~~first~~ third pipeline means;

said second pipeline means includes a means for super-sampling said 3D graphical data rendered by said second pipeline means; and

said compositing means includes a means for averaging data values from said graphical data super-sampled by said ~~first~~ third and second pipeline means.

17. (Currently Amended) The system of claim 15, wherein said ~~first~~ second pipeline means includes:

a means for identifying a first coordinate range; and

a means for discarding, based on said coordinate range, graphical data associated with coordinate values outside of said coordinate range.

18-30. (Canceled)

31. (Previously Presented) The system of claim 1, wherein each of said pipelines is implemented in hardware.

32. (Previously Presented) The system of claim 1, wherein each of said pipelines is implemented in software.

33. (Previously Presented) The system of claim 15, wherein each of said pipeline means is implemented in hardware.

34. (Previously Presented) The system of claim 15, wherein each of said pipeline means is implemented in software.

35-38. (Canceled)

39. (Currently Amended) The system of claim 1, further comprising a third graphics pipeline configured to render 3D graphical data received from said graphics application, wherein said graphics application is configured to transmit graphical data defining a 3D graphical object, wherein said 3D graphical data rendered by said first third graphics pipeline defines a portion of said 3D graphical object, and wherein said 3D graphical data rendered by said second graphics pipeline defines another portion of said 3D graphical object.

40. (Currently Amended) The system of claim 1, further comprising a third graphics pipeline configured to render 3D graphical data received from said graphics application, wherein said graphics application is configured to transmit a graphical command, wherein said 3D graphical data received rendered by said first third graphics pipeline is based on said graphical command, and wherein said 3D graphical data received rendered by said second graphics pipeline is based on said graphical command.

41. (Currently Amended) The system of claim 40, wherein said graphical command defines a 3D graphical object, wherein said first third graphics pipeline is configured to render a first portion of said 3D graphical object, without rendering a second portion of said 3D graphical object, based on said 3D graphical data received rendered by said first third graphics pipeline.

42. (Currently Amended) The system of claim 41, wherein said second graphics pipeline is configured to render said second portion of said 3D graphical object, without rendering said first portion of said 3D graphical object, based on said 3D graphical data received rendered by said second graphics pipeline.

43-52. (Canceled)

53. (Currently Amended) The system of claim 1, wherein said system further comprises: ~~a third graphics pipeline configured to receive graphical data transmitted from said graphics application and to render said graphical data received by said third graphics pipeline;~~ and logic configured to receive a graphical command from said graphics application and to detect whether said graphical command comprises two-dimensional (2D) and three-dimensional (3D) graphical data, said logic configured to enable said ~~third~~ first graphics pipeline to render any 2D graphical data contained in said command and to enable said first and second graphics pipelines to render any 3D graphical data contained in said command.

54. (Currently Amended) The system of claim 1, further comprising a third graphics pipeline configured to render 3D graphical data received from said graphics application, wherein each of said ~~first~~ third and second graphics pipelines is configured to receive each three-dimensional graphical command transmitted from said graphics application.

55. (Currently Amended) The system of claim 1, ~~wherein said first graphics pipeline is configured to receive a graphical command from said graphics application and to render graphical data from said graphical command, and wherein said second graphics pipeline is configured to receive said a graphical command from said graphics application and to discard, without rendering, all graphical data in said graphical command.~~

56. (Currently Amended) The system of claim 1, further comprising:
a third graphics pipeline configured to render 3D graphical data received from said graphics application; and further comprising
an interface configured to receive a graphical command from said graphics application, said interface coupled to said ~~first~~ third graphics pipeline via a first local area network (LAN) connection and coupled to said second graphics application via a second LAN connection, said interface configured to transmit said graphical command to said ~~first~~ third and second graphics pipelines via said first and second LAN connections.

57. (Canceled)

58. (Currently Amended) The system of claim 1, further comprising a third graphics pipeline configured to render 3D graphical data received from said graphics application, wherein said second graphics pipeline is configured to receive each graphical command received by said first third graphics pipeline.

59. (Currently Amended) The system of claim 1, further comprising a third graphics pipeline configured to render 3D graphical data received from said graphics application, wherein said first third graphics pipelines is configured to receive a graphical command from said graphics application, said graphical command having graphical data defining an image to be displayed by said display device, wherein said first third graphics pipeline is configured to render all graphical data contained in said graphical command, and wherein said second graphics pipeline is configured to receive and process said graphical command.

60. (Currently Amended) The system of claim 58 59, wherein said second graphics pipeline is configured to discard, without rendering, said graphical data contained in said graphical command.

61. (Currently Amended) The system of claim 58 59, wherein said second graphics pipeline is configured to render said graphical data contained in said graphical command.

62. (New) The system of claim 1, further comprising a third graphics pipeline configured to render 3D graphical data received from said graphics application, wherein said compositor is configured to interface, with said display device, said 3D graphical data rendered by said third graphics pipeline such that said 3D graphical data rendered by said third graphics pipeline is displayed within said region.

63. (New) The system of claim 62, wherein said second graphics pipeline is allocated to a first portion of said region and not to a second portion of said region, and wherein said third graphics pipeline is allocated to said second portion of said region.

64. (New) The system of claim 1, wherein said system comprises logic configured to determine whether a graphics command from said graphics application includes 2D graphical data, said logic configured to cause said first graphics pipeline to render said graphics command if said graphics command includes 2D graphical data and to interface said graphics command with said second graphics pipeline for rendering by said second graphics pipeline if said graphics command includes 3D graphical data.

65. (New) The system of claim 64, wherein said first graphics pipeline is configured to store, into a first frame buffer, 2D graphical data rendered by said first graphics pipeline, wherein said second graphics pipeline is configured to store, into a second frame buffer, 3D graphical data rendered by said second graphics pipeline, and wherein said compositor is configured to read data to be composited by said compositor from said first and second frame buffers.

66. (New) The system of claim 1, wherein said first graphics pipeline is configured to assign a chroma-key to pixels of said region.

67. (New) The system of claim 66, wherein said compositor is configured to combine said rendered 2D graphical data and said rendered 3D graphical data into a single data stream based on said chroma-key.

68. (New) The system of claim 1, wherein said first graphics pipeline is configured to store said rendered 2D graphical data into a first frame buffer, wherein said second graphics pipeline is configured to store said rendered 3D graphical data into a second frame buffer, and wherein said compositor is configured to read said rendered 2D and 3D graphical data from said first and second frame buffers, respectively.

69. (New) The system of claim 6, wherein said first graphics pipeline is allocated to a first portion of said region and not a second portion of said region, and wherein said second graphics pipeline is allocated to said second portion of said region.

70. (New) A graphical display method, comprising:

receiving a plurality of graphics commands from a graphics application;

determining whether each of said graphics commands includes two-dimensional (2D) or three-dimensional (3D) graphical data;

selecting, based on said determining, a first graphics pipeline to render each of said graphics commands having 2D graphical data and at least one other graphics pipeline to render each of said graphics commands having 3D graphical data;

rendering, based on said selecting, 2D graphical data from said graphics commands via said first graphics pipeline and 3D graphical data from said graphics commands via said at least one other graphics pipeline;

storing said rendered 2D graphical data in a first frame buffer and said rendered 3D graphical data in at least one other frame buffer;

compositing said stored 2D and 3D graphical data into a single data stream; and

displaying said composited data based on said data stream.

71. (New) The method of claim 70, wherein said rendering 2D graphical data comprises defining a 2D graphical object having a region for displaying 3D graphical objects, and wherein said compositing is performed such that said rendered 3D graphical data is displayed within said region.

72. (New) The method of claim 71, further comprising assigning a chroma-key to pixels of said region.

73. (New) The method of claim 72, wherein said compositing is based on said chroma-key.

74. (New) A graphical display method, comprising:

rendering, via a first graphics pipeline, two-dimensional (2D) graphical data received from a graphics application thereby defining a 2D graphical object having a region for displaying three-dimensional (3D) graphical objects;

rendering, via a second graphics pipeline, 3D graphical data received from said graphics application;

displaying said rendered 2D and 3D graphical data; and

compositing said rendered 2D and 3D graphical data such that said rendered 3D graphical data is displayed, via said displaying, within said region.

75. (New) The method of claim 74, further comprising assigning a chroma-key to pixels of said region.

76. (New) The method of claim 75, wherein said compositing comprises combining said 2D and 3D graphical data into a single data stream based on said chroma-key.

77. (New) The method of claim 74, further comprising:

storing said rendered 2D graphical data into a first frame buffer; and

storing said rendered 3D graphical data into a second frame buffer,

wherein said compositing comprises reading said rendered 2D and 3D graphical data from first and second frame buffers, respectively, and combining said rendered 2D and 3D graphical data into a single data stream.

78. (New) A graphical display system, comprising:

a graphics application configured to transmit graphical data defining an image frame, said graphical data including two-dimensional (2D) graphical data and three-dimensional (3D) graphical data;

a first graphics pipeline allocated to a first region of said image frame and not a second region of said image frame, said first graphics pipeline configured to render a first portion of said 3D graphical data based on whether said first portion is within said first region;

a second graphics pipeline allocated to said second region of said image frame, said second graphics pipeline configured to render a second portion of said 3D graphical data based on whether said second portion is within said second region;

a third graphics pipeline configured to render at least a portion of said 2D graphical data, said rendered portion of said 2D graphical data within said first and second regions; and

a compositor configured to combine, into a single data stream, said graphical data rendered by said first, second, and third graphics pipelines.

79. (New) The system of claim 78, wherein said first graphics pipeline is configured to store said rendered first portion in a first frame buffer, wherein said second graphics pipeline is configured to store said rendered second portion in a second frame buffer, wherein said third graphics pipeline is configured to store said rendered portion of said 2D graphical data in a third frame buffer, and wherein said compositor is configured to read said first, second, and third frame buffers.